

REMARKS

The present application was filed on December 18, 2001 with claims 1 through 22. Claims 1 through 22 are presently pending in the above-identified patent application.

In the Office Action, the Examiner rejected claims 1-2, 4-6, 8-9, 13-14, and 16-21 under 35 U.S.C. §103(a) as being unpatentable over Liao et al. (United States Patent Number 5,546,430) further in view of Phanse (United States Patent Number 6,798,828), rejected claims 3 and 10-12 under 35 U.S.C. §103(a) as being unpatentable over Liao et al., further in view of Phanse, and further in view of Malmberg et al. (United States Patent Application Number 2002/0150180), and rejected claims 7, 15, and 22 under 35 U.S.C. §103(a) as being unpatentable over Liao et al., further in view of Phanse, and further in view of Chan (United States Patent Application Number 6,744,831).

Independent Claims 1, 8, and 16

Independent claims 1, 8, and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Liao et al., further in view of Phanse. Regarding claims 1 and 8, the Examiner asserts that Liao teaches generating a super-trellis representing the coding system used and the dispersive channel and performing joint equalization. Regarding claim 16, the Examiner asserts that Phanse teaches the use of MLT-3 coding, wherein a trellis representing the MLT-3 code can be formed which has as least two branches leaving or entering each state, each of the branches corresponding to state transitions associated with binary values.

Applicants note that Liao teaches to use combined intersymbol and code states for channels that use trellis coded modulation (TCM). (See, col. 5, line 52, to col. 6, line 58; col. 7, line 43, to col. 8, line 12.) Contrary to the Examiner's assertion, Liao does *not* teach to *generate a trellis* using the MLT-3 code. Applicants also note that Phanse does *not* teach to generate a trellis using the MLT-3 code. Independent claim 1 requires *generating at least one trellis* representing said MLT-3 code and said dispersive channel. Independent claim 8 requires decoding of said received signal *using at least one trellis representing said MLT-3 code and said dispersive channel*.

Regarding claim 16, Applicants could find no disclosure or suggestion by Phanse that a trellis representing the MLT-3 code can be formed which has at least two branches leaving

or entering each state, each of the branches corresponding to state transitions with binary values. Independent claims 16 requires generating each of said trellis states with at least two branches leaving or entering each state, each of said at least two branches corresponding to state transitions associated with said two binary values.

5 Thus, Liao et al. and Phanse, alone or in combination, do not disclose or suggest generating at least one trellis representing said MLT-3 code and said dispersive channel, as required by independent claim 1, do not disclose or suggest decoding of said received signal using at least one trellis representing said MLT-3 code and said dispersive channel, as required by independent claim 8, and do not disclose or suggest generating each of said trellis states with
10 at least two branches leaving or entering each state, each of said at least two branches corresponding to state transitions associated with said two binary values, as required by independent claims 16.

Additional Cited References

Malmberg et al. were also cited by the Examiner for its disclosure of the use of
15 the Viterbi algorithm in a reduced-state trellis system (paragraph 30).

Applicants note that Malmberg is directed to a method for enhancing soft-value information for a Reduced-State Sequence Estimation (RSSE) type algorithm (see, Technical Field of the Invention). Applicants note that Maimberg does not, however, disclose or suggest generating a trellis representing MLT-3 code and a dispersive channel, and does not disclose or
20 suggest generating each trellis state with at least two branches leaving or entering each state, each of the at least two branches corresponding to state transitions associated with two binary values.

Thus, Malmberg et al. do not disclose or suggest generating at least one trellis representing said MLT-3 code and said dispersive channel, as required by independent claim 1,
25 do not disclose or suggest decoding of said received signal using at least one trellis representing said MLT-3 code and said dispersive channel, as required by independent claim 8, and do not disclose or suggest generating each of said trellis states with at least two branches leaving or entering each state, each of said at least two branches corresponding to state transitions associated with said two binary values, as required by independent claims 16.

Chan was also cited by the Examiner for its disclosure of a receiver, wherein the dispersive channel is an Ethernet channel (col. 1, lines 25-46).

Applicants note that Chan is directed to an integrated electronic circuit for separating transmit data from receive data in a high-speed bidirectional data transmission line such as gigabit Ethernet (col. 1, lines 18-22). Applicants note that Chan, however, does not disclose or suggest generating a trellis representing MLT-3 code and a dispersive channel, and does not disclose or suggest generating each trellis state with at least two branches leaving or entering each state, each of the at least two branches corresponding to state transitions associated with two binary values.

Thus, Chan does not disclose or suggest generating at least one trellis representing said MLT-3 code and said dispersive channel, as required by independent claim 1, does not disclose or suggest decoding of said received signal using at least one trellis representing said MLT-3 code and said dispersive channel, as required by independent claim 8, and does not disclose or suggest generating each of said trellis states with at least two branches leaving or entering each state, each of said at least two branches corresponding to state transitions associated with said two binary values, as required by independent claims 16.

Dependent Claims 2-7, 9-15 and 17-22

Dependent 2, 4-6, 9, 13-14, and 17-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Liao et al., further in view of Phanse, claims 3 and 10-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Liao et al., further in view of Phanse, and further in view of Malmberg et al., and claims 7, 15, and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Liao et al., further in view of Phanse, and further in view of Chan.

Claims 2-7, 9-15 and 17-22 are dependent on claims 1, 8, and 16, respectively, and are therefore patentably distinguished over Liao et al., Phanse, Malmberg et al., and Chan (alone or in combination) because of their dependency from independent claims 1, 8, and 16 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

All of the pending claims, i.e., claims 1-22, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,



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